

PATENT APPLICATION

THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE HONORABLE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Application of

David Szymanski

Application No.: 10/780,323

Examiner: Clark F. Dexter

Filed: 02/17/2004

Docket No.: INDI 2 00002

For: **WOOD CUTTING SAW CHAIN AND REPLACEABLE CUTTING MEMBERS**

**BRIEF ON APPEAL**

Appeal from Group 3724

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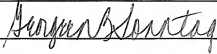
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**I. REAL PARTY IN INTEREST**

The real party in interest for this appeal and the present application is the inventor David Szymanski. The present application is not assigned to, or subject of assignment to any other party.

## **II. RELATED APPEALS AND INTERFERENCES**

Currently, it is believed there are no prior or pending appeals, interferences or judicial proceedings, known to Appellant, Appellant's representative, or the Assignee, that may be related to, or which will directly affect or be directly affected by or have a bearing upon the Board's decision in the pending Appeal.

### **III. STATUS OF CLAIMS**

The status of the claims set forth in the Office Action mailed on February 06, 2008 was, and is, as follows:

Claims 1-3, 5-27, 29 and 30 are on appeal.

Claims 1-3, 5-27, 29 and 30 are pending.

Claims 1-3, 5-10, 12-16, 18-20, 23 and 24 are rejected.

Claims 11, 17, 21, 22, 25-27, 29 and 30 are withdrawn from consideration.

#### **IV. STATUS OF AMENDMENTS**

An Amendment After Final Rejection was filed on November 14, 2007. The response was directed solely to removing claim objections and directly incorporated the Examiner's suggested language.

## V. SUMMARY OF CLAIMED SUBJECT MATTER

The present application is directed toward a quick change cutting link of a saw chain for cutting wood.

Independent claim 1 is directed to a quick change cutting link (Figs. 1, 6, 7 and 8, page 8, line 2) for a saw chain for cutting wood (page 9, lines 1-3) including a base member (page 8, line 5) adapted to be pivotally connected to other links (page 8, line 3) of the saw chain, which includes a seat surface having a first taper (page 9, lines 8-9). The quick change cutting link further includes a cutting member (Figs. 2-5, page 9, line 8) that comprises a cutting edge (page 9, line 15) and releasably engages the base member. The cutting member includes a surface having a second taper (page 9, lines 8-9) and the first taper and said second taper extend at an angle ranging from about  $0.5^\circ$  to about  $45^\circ$  (page 10, line 2) relative to a direction of chain travel at a close tolerance effective to cause self-locking engagement (page 10, lines 3-4) of the first taper of the seat surface and the second taper of said cutting member surface.

Independent claim 15 is directed to a quick change cutting link for a saw chain for cutting wood (Figs. 1 and 6-8, page 9, lines 1-3), comprising a base member adapted to be pivotally connected to other links of the saw chain (page 8, line 3), said base member comprising a seat surface (page 9, line 9); and a cutting member (Figs. 2-5, page 9, line 8) that comprises a cutting edge and releasably engages said seat surface of said base member, wherein said cutting member and seat surface each consists essentially of sintered and compacted particles of abrasion resistant material (page 11, lines 11-12).

Independent claim 16 is directed to a quick change cutting member for a saw chain for cutting wood (Figs. 1 and 6-8, page 9, lines 1-3), comprising a cutting edge (page 9, line 15) and an interior recess (page 10, lines 15-16) having a surface having a taper extending at an angle

ranging from about  $0.5^{\circ}$  to about  $45^{\circ}$  relative to a direction of travel of said cutting member when fastened on a chain (page 10, lines 26-17), said taper having a close tolerance comprising no more than  $0.5^{\circ}$  to a mating taper of a base member (page 10, lines 4-6), wherein said cutting member consists essentially of sintered and compacted particles of abrasion resistant material (page 11, lines 11-12).

Independent claim 18 is directed to a base member of a cutting link for a saw chain for cutting wood (page 8, line 5), said base member being adapted to be pivotally connected to other links of the saw chain (page 8, line 5), said base member comprising a seat surface having a taper (page 9, line 9) extending at an angle ranging from about  $0.5^{\circ}$  to about  $45^{\circ}$  relative to a direction of travel of the base member when fastened on the chain (page 10, lines 2-4), said taper having a close tolerance comprising no more than  $0.5^{\circ}$  to a mating taper of a cutting member (page 10, lines 4-7) wherein said base member consists essentially of sintered and compacted particles of abrasion resistant material (page 11, lines 11-12).

Independent claim 19 is directed to a quick change cutting link for a saw chain for cutting wood (Figs. 1 and 6-8, page 9, lines 1-3), comprising a base member adapted to be pivotally connected to other links of the saw chain (page 8, line 5), said base member comprising a seat surface having a first taper (page 9, line 9) and a stop surface (page 9, line 12) located upstream of said seat surface relative to the direction of travel of the chain; and a cutting member (page 9, line 8) that comprises a cutting edge (page 9, line 15) and releasably engages said seat surface of said base member, said cutting member including a surface having a second taper (page 9, lines 8-9), wherein said first taper and said second taper extend at an angle ranging from about  $0.5^{\circ}$  to about  $45^{\circ}$  relative to a direction of chain travel (page 10, lines 2-3) at a close tolerance effective to cause locking engagement of said first taper of said seat surface and said second taper of said cutting member surface (page 10, lines 3-7), and said cutting member comprises sintered and



compacted particles of abrasion resistant material (page 11, lines 11-12).

## **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

The following grounds of rejection are presented for review:

Claims 15 and 18 are objected to because of informalities.

Claims 1-3, 6-9, 12, 15, 18-20, 23 and 24 are rejected as being obvious under 35 U.S.C. §103(a) over one of Wright (U.S. Pat. No. 4,744,278) in view of Funakubo (U.S. Pat. No. 3,800,633).

Claims 1-3, 6-9, 13-16, 18-20, 23 and 24 are rejected under 35 U.S.C. §103(a) as being unpatentable over Raetz (U.S. Pat. No. 3,547,167) in view of Funakubo (U.S. Pat. No. 3,800,633).

Claim 5 is rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of Wright in view of Funakubo or the combination of Raetz in view of Funakubo as applied to claim 1, and further in view of any one of Ackley (U.S. Pat. No. 2,725,083), Oehrli (U.S. Patent No. 3,144,059), Ehlen (U.S. Pat. No. 3,308,859).

Claim 10 is rejected under 35 U.S.C. §103(a) as being unpatentable over Wright in view of Funakubo or the combination of Raetz in view of Funakubo as applied to claim 1, and further in view of any one of Dawson (U.S. Pat. No. 3,023,490) or Gaddis (U.S. Pat. No. 4,750,396).

## VII. ARGUMENT

**A. Claims 15 and 16 Have Been Amended in an Amendment After Final**

By way of an Amendment After Final, claims 15 and 16 have been amended for clarification purposes in response to the Examiner's objections. It is believed that the claim objection therefore has been withdrawn.

**B. The Rejection of Claims 1-3, 6-9, 12, 15, 18-20, 23 and 24 Over Wright in View of Funakubo is Erroneous**

**1. Claims 1-3, 6-9, 12, 15, 19-20, 23 and 24 are Patentable Over Wright**

Independent claims 1, 15 and 19 are directed to a quick change cutting link for a saw chain for cutting wood including a base member adapted to be pivotally connected to other links of the saw chain, which includes a seat surface having a first taper. The quick change cutting link further includes a cutting member that comprises a cutting edge and releasably engages the base member. The cutting member includes a surface having a second taper and the first taper and said second taper extend at an angle ranging from about 0.5° to about 45° relative to a direction of chain travel at a close tolerance effective to cause self-locking engagement of the first taper of the seat surface and the second taper of said cutting member surface. It is respectfully submitted that Wright does not disclose each and every limitation comprising independent claims 1, 15 and 19.

Particularly, Wright fails to teach a cutting link for a saw chain including a base member adapted to be pivotally connected to other links of the saw chain. According to the Examiner, Wright discloses a base member (clevis) that is "adapted" to be pivotally connected to other links in the saw chain in that it has pivot openings and is capable of being pivotally connected to other structures. Applicant respectfully disagrees with the Examiner's reasoning. The clevis taught by

Wright is attached to the shoulder of a sawplate. The sawplate of a circular saw, by nature does not contain any links. However, even if the sawplate did contain links, the clevis, as taught in Wright, would not be adapted to be pivotally connected to such links. Claims 1, 15 and 19 each recite: "a quick change cutting link of a saw chain for cutting wood comprising a base member..." Therefore, the base member forms part of a cutting link, the other part being the cutting member. As a link on a saw chain, the base member must contain two connection points, so as to join two other links creating a chain. The base member is pivotally connected to other links allowing the chain to move and bend by pivoting at the connection points. The clevis, as described in Wright, comprises only one connection point; therefore, there is no way for the clevis to be "adapted" to act as a link and pivotally connect to other links on a saw chain, nor is there any suggestion in Wright as to such a construction.

Accordingly, for at least the aforementioned reasons, Applicant/Appellant submits that the Examiner's rejection of independent claims 1, 15 and 19 (along with claims 2-3, 6-9, 12, 20, 23 and 24 that depend therefrom) must be reversed.

## **2. Claim 18 is Patentable Over Wright**

Claim 18 is directed to a base member of a cutting link for a saw chain for cutting wood. The base member is adapted to be pivotally connected to other links of the saw chain and comprises a seat surface having a taper extending at an angle ranging from about 0.5° to about 45° relative to a direction of travel of the base member when fastened on the chain. It is respectfully submitted that Wright fails to teach each of the limitations of independent claim 18.

As discussed more thoroughly above in Section A1, Wright does not teach of a base member of a cutting link for a saw chain for cutting wood. The clevis, as taught in Wright, does not comprise a link, nor does Wright suggest such a construction. Therefore, it is impossible for

the clevis to be pivotally connected to other links. It is respectfully submitted that Wright fails to render the subject claim unpatentable. As such, Applicant/Appellant respectfully requests reversal of this rejection.

**3. Funakubo Does Not Make Up For the Deficiencies in Wright**

The Examiner asserts that although Wright lacks the specific material designations for each of the base member and cutting member in claims 1, 6-9, 15, 18 and 19, use of such material on cutting teeth is old and well known in the art. The Examiner uses Funakubo as one example of a disclosure that discusses many of the claimed materials. However, Funakubo fails to cure the aforementioned deficiencies found in Wright with respect to the claims. That is, the Examiner cites Funakubo for teaching the use of sintered and compacted particles of abrasion resistant material. Even assuming the Funakubo discloses the use of such materials in cutting members and even assuming the propriety of combining Funakubo with Wright, such a combination still does not disclose or suggest the claimed invention. Thus, withdrawal of the rejection is respectfully requested.

**C. The Rejection of Claims 1-3, 6-9, 13-16, 23 and 24 Over Raetz in view of Funakubo Must be Reversed**

**1. Claims 1-3, 6-9, 16, 18, 19, 20 and 23-24 are Patentable Over Raetz**

Independent claims 1 and 19 (and similarly independent claims 15, 16 and 18) are directed to a quick change cutting link for a saw chain for cutting wood including a base member adapted to be pivotally connected to other links of the saw chain, which includes a seat surface having a first taper. The quick change cutting link further includes a cutting member that comprises a cutting edge and releasably engages the base member. The cutting member includes a surface having a second taper and the first taper and said second taper extend at an angle ranging from about 0.5° to about 45° relative to a direction of chain travel at a close tolerance

effective to cause self-locking engagement of the first taper of the seat surface and the second taper of said cutting member surface. It is respectfully submitted that Raetz does not disclose each and every limitation comprising independent claims 1, 15, 16, 18 and 19 (along with claims 2-3, 6-9, 20 and 23-24 that depend therefrom).

Specifically, Raetz fails to teach a cutting member that includes a surface having a second taper that extends at an angle ranging from about 0.5 degrees to about 45 degrees relative to a direction of chain travel. In col. 2, line 71-72 of Raetz, a cutting sleeve is disclosed having a uniform cross section throughout its entire length. Moreover, col. 3, lines 1-3 teach that the cutting sleeve has a passage with a cross section in the longitudinal direction is rectangular and corresponds to the cross section of the stud. A rectangular cross section certainly does not indicate a tapered surface, since having a taper would result in more of a trapezoidal shape. The Examiner fails to point out any teaching that supports the notion that the cutting sleeve of Raetz discloses a tapered surface. The Examiner only states a disagreement with Applicant/Appellant's conclusion that Raetz fails to disclose a cutting member with tapered surface. See Office Action of 02/06/2008, Response to Arguments, page 15. Applicant/Appellant submits that no such teaching is found in Raetz to support the Examiner's rejection. Accordingly, for at least these reasons, Applicant/Appellant submits that the Examiner's rejection of independent claims 1, 15, 16, 18 and 19 (along with claims 2-3, 6-9, 20 and 23-24 that depend therefrom) must be reversed.

## **2. Funakubo Does Not Make Up For the Deficiencies in Wright**

The Examiner asserts that although Raetz lacks the specific material designations for each of the base member and cutting member in claims 1, 6-9, 15, 16, 18 and 19, use of such material on cutting teeth is old and well known in the art. The Examiner uses Funakubo as one

example of a disclosure that discusses many of the claimed materials. However, as indicated above, Raetz does not teach or suggest each element of independent claims 1, 15, 16, 18 and 19. Funakubo fails to cure the aforementioned deficiencies found in Raetz with respect to the claims. Even providing the Funakubo discloses the use of such materials in cutting members and even assuming the propriety of combining Funakubo with Raetz, such a combination still does not disclose or suggest the claimed invention. Thus withdrawal of the rejection is respectfully requested.

**D. The Rejection of Claims 5 and 10 is Erroneous**

Claims 5 and 10 are directed to materials for making a base member and a cutting member respectively. Claim 5 is directed to a base member comprising stamped metal. Claim 10 is directed to a cutting member that comprises a tool steel alloy. Both claim 5 and claim 10 alike depend from and include all the limitations of independent claim 1. None of the patents referenced by the Examiner, Ackley (U.S. Pat. No. 2,725,083), Oehrli (U.S. Patent No. 3,144,059), Ehlen (U.S. Pat. No. 3,308,859), Dawson (U.S. Pat. No. 3,023,490) or Gaddis (U.S. Pat. No. 4,750,396), make up for the aforementioned deficiencies of Wright and Raetz. Therefore, the rejection should be reversed.

**CONCLUSION**

For all of the reasons discussed above, it is respectfully submitted that the rejections are in error and that claims 1-3, 5-10, 12-16, 18-20, 23 and 24 are in condition for allowance. For all of the above reasons, Applicant/Appellant respectfully requests this Honorable Board to reverse the rejections of claims 1-3, 5-10, 12-16, 18-20, 23 and 24.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Scott A. McCollister', is written over a horizontal line.

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**APPENDICES**

**VIII. CLAIMS APPENDIX**

Claims involved in the Appeal are as follows:

**LISTING OF THE CLAIMS**

1. (Previously Presented) A quick change cutting link for a saw chain for cutting wood, comprising a base member adapted to be pivotally connected to other links of the saw chain, said base member comprising a seat surface having a first taper; and a cutting member that comprises a cutting edge and releasably engages said base member, said cutting member including a surface having a second taper, said first taper and said second taper extend at an angle ranging from about 0.5° to about 45° relative to a direction of chain travel at a close tolerance effective to cause self-locking engagement of said first taper of said seat surface and said second taper of said cutting member surface.

2. (Previously Presented) The quick change cutting link of claim 1 wherein said close tolerance comprises no more than about 1°.

3. (Previously Presented) The quick change cutting link of claim 1 wherein said close tolerance comprises no more than 0.5°.

4. (Cancelled)

5. (Previously Presented) The quick change cutting link of claim 1 wherein said base member comprises stamped metal.

6. (Original) The quick change cutting link of claim 1 wherein said base member comprises sintered and compacted particles of abrasion resistant material.

7. (Previously Presented) The quick change cutting link of claim 1 wherein said abrasion resistant material comprises at least one of metal and ceramic.

8. (Original) The quick change cutting link of claim 7 wherein said abrasion resistant material comprises a carbide containing compound.

9. (Original) The quick change cutting link of claim 8 wherein said carbide containing compound comprises a compound selected from the group consisting of tungsten carbide, silicon carbide, tantalum carbide and aluminum carbide.

10. (Previously Presented) The quick change cutting link of claim 1 wherein said abrasion resistant material comprises a tool steel alloy.

11. (Withdrawn) The quick change cutting link of claim 1 wherein one of said seat surface and said cutting member includes an inverted-L shaped protrusion and the other of said seat surface and said cutting member includes an inverted-L shaped recess for receiving said inverted-L shaped protrusion, and wherein one of said first taper and said second taper forms a surface of said L-shaped protrusion.

12. (Original) The quick change cutting link of claim 1 wherein at least one of said cutting member and said base member comprises a water-resistant material applied by a process selected from the group consisting of steam treatment, resin infiltration, copper infiltration and loctite infiltration.

13. (Original) A saw chain comprising a plurality of the quick change cutting links of claim 1.

14. (Previously Presented) The saw chain of claim 13 wherein said saw chain is adapted for use on a saw comprising one of a chain saw, a timber harvester, a buck saw and a saw for cutting wood pallets.

15. (Previously Presented) A quick change cutting link for a saw chain for cutting wood, comprising a base member adapted to be pivotally connected to other links of the saw chain, said base member comprising a seat surface; and a cutting member that comprises a cutting edge and

releasably engages said seat surface of said base member, wherein said cutting member and seat surface each consists essentially of sintered and compacted particles of abrasion resistant material.

16. (Previously Presented) A quick change cutting member for a saw chain for cutting wood, comprising a cutting edge and an interior recess having a surface having a taper extending at an angle ranging from about  $0.5^\circ$  to about  $45^\circ$  relative to a direction of travel of said cutting member when fastened on a chain, said taper having a close tolerance comprising no more than  $0.5^\circ$  to a mating taper of a base member, wherein said cutting member consists essentially of sintered and compacted particles of abrasion resistant material.

17. (Withdrawn) The quick change cutting member of claim 16 comprising one of an inverted-L shaped protrusion and an inverted-L shaped recess.

18. (Previously Presented) A base member of a cutting link for a saw chain for cutting wood, said base member being adapted to be pivotally connected to other links of the saw chain, said base member comprising a seat surface having a taper extending at an angle ranging from about  $0.5^\circ$  to about  $45^\circ$  relative to a direction of travel of the base member when fastened on the chain, said taper having a close tolerance comprising no more than  $0.5^\circ$  to a mating taper of a cutting member, wherein said base member consists essentially of sintered and compacted particles of abrasion resistant material.

19. (Previously Presented) A quick change cutting link for a saw chain for cutting wood, comprising a base member adapted to be pivotally connected to other links of the saw chain, said base member comprising a seat surface having a first taper and a stop surface located upstream of said seat surface relative to the direction of travel of the chain; and a cutting member that comprises a cutting edge and releasably engages said seat surface of said base member, said cutting member including a surface having a second taper, wherein said first taper and said second taper extend at an angle ranging from about  $0.5^\circ$  to about  $45^\circ$  relative to a direction of chain travel at a close tolerance effective to cause locking engagement of said first taper of said seat surface and said second taper of said cutting member surface, and said cutting member

comprises sintered and compacted particles of abrasion resistant material.

20. (Previously Presented) The quick change cutting link of claim 19 wherein said close tolerance comprises no more than  $0.5^\circ$ .

21. (Withdrawn) The quick change cutting link of claim 19 wherein one of said seat surface and said cutting member has an inverted-L shaped protrusion and the other of said seat surface and said cutting member has an inverted-L shaped recess for receiving said inverted-L shaped protrusion.

22. (Withdrawn) The quick change cutting link of claim 21 wherein one of said first taper and said second taper forms a surface of said L-shaped protrusion.

23. (Original) The quick change cutting link of claim 19 wherein said first taper and said second taper extend upwardly or downwardly from a location near said cutting edge in a direction opposite to said direction of chain travel.

24. (Original) The quick change cutting link of claim 19 wherein said angle is about 10 degrees or less.

25. (Withdrawn) The quick change cutting link of claim 19 wherein said cutting member includes a leading surface relative to said direction of chain travel which forms said cutting edge at an upper location of said leading surface, said leading surface having a radius of curvature for a given chain pitch that is proportional to a radius of about 0.25 inch for a chain pitch of 0.750 inch.

26. (Withdrawn) The quick change cutting link of claim 25 wherein said curvature is concave from a point of reference external to said cutting member.

27. (Withdrawn) The quick change cutting link of the claim 1 wherein the cutting member includes a recess to engage the base member.

28. (Cancelled)

29. (Withdrawn) The quick change cutting link of claim 1 wherein the seat surface includes a vertically continuous protrusion extending upward from the base member to engage the cutting member.

30. (Withdrawn) The quick change of claim 1 wherein the seat surface includes a ridge internal wedge.

**IX. EVIDENCE APPENDIX**

NONE

**X. RELATED PROCEEDINGS APPENDIX**

NONE